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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,511	02/16/2005	Sang-Soo Kwak	WON-0003	9215
7590 11/16/2006				
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		EXAMINER		
		MARTIN, PAUL C		
		ART UNIT PAPER NUMBER		
		1657		

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/519,511

Applicant(s)

KWAK ET AL.

Examiner

Paul C. Martin

Art Unit

1657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-3 and 7-9 are pending in this application and were examined on their merits.

The objection to Claim 7 is withdrawn due to the Applicant's amendment to the claim.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3 and 7-9 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Byth *et al.* (2000) in view of Ichinose *et al.* (1995).

This rejection is maintained for reasons of record set forth in the Action mailed 05/23/06.

Applicant's arguments filed 08/23/06 have been fully considered but they are not deemed to be persuasive.

***Response to Arguments***

The Applicant argues that Byth *et al.* does not teach a high throughput method for screening for a modulation in plant cell growth, but demonstrates the applicability of a commonly used assay for quantitatively determining the viability and/or proliferation of mammalian cells and microorganisms, for use in determining the viability of plant cells (Remarks, Pg. 2, Lines 8-14) and does not teach or suggest that this method can be used in a high throughput screening assay wherein the activity of abundant compounds is analyzed simultaneously in photomixotrophic cells with small amounts of samples (Remarks, Pg. 3, Lines 2-6).

At the outset, the Examiner notes that a high-throughput screening assay as commonly defined in the art is the use of a multiwell plate combined with the use of automation or specialized machinery in detecting and analyzing data from the assay about how some biological entity reacts to exposure to various chemical compounds in a short period of time (See High Throughput Screening, Wikipedia). Clearly the method of Byth *et al.*, which involves exposing cell suspension cultures in microwell plates to a virulent bacterium (a plant growth regulator) and determining the viability of the cells by performing an analysis using a micro-plate reader and statistical analysis software, constitutes a high-throughput screening assay for a plant growth regulator.

Art Unit: 1657

The Examiner also notes that the instant claims do not describe determining the activity of abundant compounds which are analyzed simultaneously in photomixotrophic cells with small amounts of samples, merely that an unspecified number of plant growth regulators are tested on cultured photomixotrophic cells.

The Applicant argues that Ichinose *et al.* provides no teaching or suggestion of a high throughput assay, and that the assay taught by Ichinose *et al.* is inappropriate for a high throughput screening assay and does not teach or suggest that this method can be used in a high throughput screening assay wherein the activity of abundant compounds is analyzed simultaneously in photomixotrophic cells with small amounts of samples

(Remarks, Pg. 3, Lines 8-10)

As in the case of Byth *et al.* above, Ichinose *et al.* also teaches the use of multiwell plates and the use of a fluorescence micro-plate reader in an assay to screen the effect of multiple herbicides on plant cell growth, which constitutes a high throughput screening assay.

The Applicant argues that since the objectives of these two references were unrelated to developing a high throughput assay for screening for plant growth regulators, by analyzing the activity of abundant compounds is analyzed simultaneously in photomixotrophic cells with small amounts of samples, that the combination of the two references fails to teach or suggest the claimed invention, fails to provide motivation to modify their teachings to arrive at the claimed invention, and fails to provide a reasonable expectation of success in arriving at the claimed invention (Remarks, Pg. 3, Lines 9-24 and Pg. 4, Lines 1-4).

The Examiner respectfully disagrees with the Applicant, and finds that it would have been obvious to combine two high throughput screening methods for the effects of a plant cell growth regulators as taught by Byth *et al.* and Ichinose *et al.* because of the benefit described by Ichinose *et al.* of being able to screen the effects of herbicides on cells with chloroplasts and chlorophyll biosynthetic pathways and determine the target site and location of the target site with the herbicides (Pg. 694, Column 1, Lines 16-36). There would be a reasonable expectation of success because both assays are directed to high-throughput screening assays of plant cell growth regulators on cultured plant cells.

The Applicant argues that it was difficult to evaluate candidate herbicidal without evaluating the response in intact plants and that until the inventor's experiments, the predictability of photomixotrophic cells in identifying plant growth regulators was unrecognized (Remarks, Pg. 4, Lines 15-18).

The Examiner respectfully disagrees, and cites the Ichinose *et al.* reference which clearly shows the applicability of a high throughput screening assay of plant cell growth regulators prior to the instant invention.

### ***Conclusion***

No Claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul C. Martin whose telephone number is 571-272-3348. The examiner can normally be reached on M-F 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1657

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Martin  
Examiner  
Art Unit 1657

10/31/06



PATRICIA LEITH  
PRIMARY EXAMINER